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THE GALL MIDGE FAUNA OF NEW ENGLAND.

BY E. P. FELT,
Albany, N. Y.

The following list of New England Diptera referable to the Itonididae has been made possible through the co-operation of a few individuals. Mr. C. W. Johnson and Mr. Owen Bryant have collected in various localities and generously placed their material at our disposal, while Miss Cora H. Clarke has been particularly successful in collecting galls and rearing the adults. The late Dr. M. T. Thompson made noteworthy additions to our knowledge of this group. In addition to the above we have referred to the list of insect galls prepared by Miss Stebbins.¹ This latter includes a considerable number of common species which have also been recorded or observed by other workers.

In view of the fact that nearly 900 species of gall midges are known to occur in America, it can hardly be claimed that the present list of 137 species exhausts the possibilities for New England, though it compares very favorably with the list of forms recorded by us from western North America,² a territory much larger and more diversified than that of New England. The similarities and differences in our knowledge concerning the fauna of these areas is well shown in the following tabulation.

¹ 1910, Stebbins, F. A. Springfield Mus. Nat. Hist. Bul. 2.

² 1912, Pomona College Journ. of Ent. 4:753-57.

AMERICAN SPECIES OF ITONIDIDÆ.

Subfamilies or tribes	North America	New England	Western North America
Lestremiinarïæ.....	29	3	9
Campylomyzariæ.....	58	4	11
Heteropezinæ.....	13	2	0
Epidosariæ.....	70	6	4
Dasyneuriariæ.....	129	21	15
Lasiopterariæ.....	143	25	22
Oligotrophariæ.....	86	16	20
Asphondyliariæ.....	67	16	21
Itonidinariæ.....	278	44	20
	873	137	122

A reference to the above table shows a fairly uniform tribal and subfamily representation in the known New England forms. A detailed examination of the list will show that much of our knowledge of *Cincticornia* and *Caryomyia* is due to the work of Miss Clarke. Comparing the New England fauna with that of the western part of the Continent, it will be noted that in the latter, both the *Lestremiinarïæ* and the *Campylomyzariæ* exceed the New England forms by considerable, while no representative of the *Heteropezinæ* has been collected and there is a relatively small representation of the *Itonidinariæ*. Over half of the known American species have been reared. There is still an immense amount of work to be done along this line and in New England at least, one would expect judicious collecting to result in the discovery of at least a fairly rich fauna in both the *Heteropezinæ* and the *Epidosariæ*.

A considerable porportion of the many forms occurring on *Salix* and *Solidago*³ should be found in New England.

In addition to the species tabulated below, there are some twenty-two names which have been applied to galls collected in New England and which probably represent undescribed forms. These latter names, some of which are valid, are given at the end of the list.

³ Journ. Econ. Entom. 4:46S-72.

LESTREMIINÆ.

Lestremiiniariæ.

- Catocha americana* Felt, Franconia, N. H., Mrs. A. T. Slosson.
C. slossonæ Felt, Franconia, N. H., Mrs. A. T. Slosson.
Lestremia franconiæ Felt, Franconia, N. H., Mrs. A. T. Slosson.

Campylomyzariæ.

- Prionellus dilatata* Felt, Worcester, Mass., Dr. M. T. Thompson.
Monardia barlowi Felt, Kingston, R. I., Prof. John Barlow.
M. articulosa Felt, White Mountains, Morrison.
M. modesta sp. nov., New Haven, Conn., H. L. Viereck.

Heteropeziniæ.

- Miastor americana* Felt, Connecticut, Prof. W. M. Wheeler.
Johnsonomyia rubra Felt, Montpelier, Vt., C. W. Johnson, June 1906.

ITONIDIDINÆ

Epidosariæ.

- Didactylomyia longimana* Felt, Auburndale, Mass., August 1906, C. W. Johnson.
D. capitata sp. nov., North Adams, Mass., August 1907, Owen Bryant.
Colpodia cornuta sp. nov., Jamaica Plain, Mass., October 31, 1910, Miss Cora H. Clarke.
Dirhiza montana Felt, White Mountains, Morrison.
Asynapta frosti sp. nov., Framingham, Mass., June 1, 1910, C. A. Frost.
A. nobilis sp. nov., Bridgeton, Me., August 25, C. W. Johnson.

Dasyneurariæ.

- Rhabdophaga salicifolia* Felt. Thickened, greenish midrib fold on Spiræa. Magnolia, Mass., Miss Cora H. Clarke.
R. batatas Walsh. Irregular, ovoid or subglobular twig gall on willow. Springfield, Mass., Miss F. A. Stebbins.
R. strobiloides Walsh. Pine cone gall on willow, common in New England.
R. brassicoides Walsh. Large, open, rosette or cabbage gall on willow. Springfield, Mass., Miss F. A. Stebbins.
R. gnaphaloides Walsh. Ovate, terminal bud gall on willow. Springfield, Mass., Miss F. A. Stebbins.

- Dasyneura trifolii* Loew. Apposed, deformed, discolored leaflets of sweet clover. Stowe, Mass.
- D. cyanococci* Felt, Stowe, Mass., apical bud gall on blueberry.
- D. clematidis* Felt. Irregular, subglobular bud gall on Clematis. Springfield, Mass., Miss F. A. Stebbins.
- D. parthenocissi* Stebb. Thickened midrib or vein fold on Virginia creeper. Springfield, Mass., Miss F. A. Stebbins.
- D. gleditschiæ* O. S., New Haven, Conn., on honey locust, June 1904, B. H. Walden.
- D. americana* nom. nov. (*D. galii* Felt) Magnolia, Mass. Flower bud galls on bedstraw, Miss Cora H. Clarke.
- D. corticis* Felt, Boston, Mass. Small willow twigs, Miss Cora H. Clarke.
- D. seminivora* Beutm. Irregular, deformed fruit of violet. Springfield, Mass., Miss F. A. Stebbins.
- D. salicifolii* Felt, Magnolia, Mass. Young terminal adherent willow leaves, Miss Cora H. Clarke.
- D. ulmea* Felt. Aborted elm buds, Jamaica Plain, Mass., J. G. Jack.
- D. gaylussacii* Felt. Oval, valved midrib gall on cranberry. Springfield, Mass., Miss F. A. Stebbins.
- D. radifolii* Felt, Magnolia, Mass. Oval galls on root leaves of Solidago, Miss Cora H. Clarke.
- D. aromatiæ* Felt, Barre, Mass. Sprigs of mint, Miss Cora H. Clarke.
- D. toweri* Felt, Magnolia, Mass. Enlarged flower buds of *Hypericum mutilum*, Miss Cora H. Clarke.
- D. serrulatæ* O. S. Apical bud gall on alder. Springfield, Mass., Miss F. A. Stebbins.
- Cystiphora viburnifolia* Felt, Magnolia, Mass. Blister leaf galls on hobblebush, Miss Cora H. Clarke.

Lasiopterariæ.

- L. vitis* O. S. Irregular, tumid, greenish or reddish leaf or tendril gall on grape. Springfield, Mass., Miss F. A. Stebbins.
- L. corni* Felt. Yellowish, purple-margined, blister gall on *Cornus stolonifera*. Springfield, Mass., Miss F. A. Stebbins.
- L. clavula* Beutm. Clavate apical twig gall on flowering dogwood. Springfield, Mass., Miss F. A. Stebbins.

- L. impatientifolia* Felt. Tumid midrib fold on balsam or jewelweed. Springfield, Mass., Miss F. A. Stebbins.
- L. querciperda* Felt. Subcortical swellings on white oak twigs. New Haven, Conn., A. B. Champlain.
- L. farinosa* Beutm. Warty, pruinose leaf gall on blackberry. Springfield, Mass., Miss F. A. Stebbins.
- L. nodulosa* Beutm. Irregular, subcortical stem gall on blackberry. Springfield, Mass., Miss F. A. Stebbins.
- L. galeopsidis* Felt., Boston, Mass. Irregular stem galls on hemp nettle, Miss Cora H. Clarke.
- L. virginica* Felt, Magnolia, Mass. Stem galls on Marsh St. Johnswort, Miss Cora H. Clarke.
- L. convolvuli* Felt. Fusiform stem gall on hedge bindweed. Springfield, Mass., Miss F. A. Stebbins.
- L. cylindrigallæ* Felt. Long, uniform stem swelling on solidago. Mount Tom, Mass., Dr. J. R. Gillett.
- L. solidaginis* O. S. (*tumifica* Beutm.) Irregular or eccentric stem gall on solidago. Worcester, Mass. Dr. M. T. Thompson.
- L. clarkei* Felt, Magnolia, Mass. Whitish, circular blister gall on *Aster macrophyllus*, Miss Cora H. Clarke.
- L. spiræfolia* Felt. Yellowish brown, blister gall on *Spiræa salicifolia*. Magnolia, Mass., Miss Cora H. Clarke.
- Neolasioptera vitinea* Felt, Worcester, Mass. An obpyriform conical, slightly curved petiole gall on grape, Dr. M. T. Thompson.
- N. sambuci* Felt, Worcester, Mass. Irregular stem gall on elder, Dr. M. T. Thompson.
- N. perfoliata* Felt, Worcester, Mass. Stem gall on boneset, Dr. M. T. Thompson.
- N. ramuscula* Beutm., Worcester, Mass. Fusiform stem gall on aster, Dr. M. T. Thompson.
- Asteromyia vesiculosa* Felt, Magnolia, Mass. Oval swellings in aster leaves, Mrs. H. M. Tower.
- A. carbonifera* Felt. Oval, black blister gall on *Salix graminifolia*, Springfield, Mass., Miss F. A. Stebbins.
- A. dumosa* Felt, Annisquam, Cape Ann, Mass. Inconspicuous blister leaf gall on aster, Miss Cora H. Clarke.
- A. asterifolia* Beutm. Yellowish white, dark-margined blister leaf gall on aster. Springfield, Mass., Miss F. A. Stebbins.

- A. flavolunata* Felt. Marginal stem, oval, yellowish blister gall on *Solidago canadensis*. Springfield, Mass., Miss F. A. Stebbins.
- Clinorhyncha filicis* Felt, Magnolia, Mass. Apparently reared from galls of *Hormomyia verruca* Walsh, Miss Cora H. Clarke.
- Camptoneuromyia rubifolia* Felt, Magnolia, Mass. Marginal leaf galls on high blackberry, Miss Cora H. Clarke.

Oligotrophiariæ.

- Phytophaga rigidæ* O. S. Apical, fusiform, beaked gall on willow. Springfield, Mass., Miss F. A. Stebbins.
- Janetiella asplenifolia* Felt, Worcester, Mass. Fleshy leaf fold near midvein of sweet fern leaves, Dr. M. T. Thompson.
- Rhopalomyia clarkei* Felt, Tamworth, N. H. Small, fusiform gall on *Solidago* leaves, Miss Cora H. Clarke.
- R. hirtipes* O. S. Worcester and Springfield, Mass. Globose rootstalk and apical stem galls, Dr. M. T. Thompson and Miss F. A. Stebbins.
- R. racemicola* O. S. Springfield, Mass. Greenish or reddish, subglobular flower bud gall on *solidago*, Miss F. A. Stebbins.
- R. solidaginis* Loew., Springfield, Mass. Apical, globular, rosette gall on *solidago*, Miss F. A. Stebbins.
- R. anthophila* O. S. Green, densely, pubescent, cylindric flower gall on *solidago*. Springfield, Mass., Miss F. A. Stebbins.
- R. lateriflori* Felt. Axillary bud gall on *Aster lateriflorus*. Springfield, Mass., Miss F. A. Stebbins (*gemmaria*).
- R. thompsoni* Felt, Worcester, Mass. Globular or ovoid root stalk gall on *Solidago*, Dr. M. T. Thompson.
- R. astericaulis* Felt, Worcester, Mass. Oval twig gall on aster, Dr. M. T. Thompson.
- R. pedicellata* Felt. Green, red-marked, fusiform, stemmed leaf gall on narrow-leaved *solidago*. Springfield, Mass., Miss F. A. Stebbins (*euthamiae*).
- R. bulbula* Felt, Worcester, Mass. Small bulb-like galls on *Solidago*, Dr. M. T. Thompson.
- R. castaneæ* Felt, Stowe, Mass. Leaf petiole of chestnut.
- R. ? strobiligemma* Stebb. Apical or axillary, ovate bud gall on white heath aster. Springfield, Mass., Miss F. A. Stebbins.
- Sackenomyia virburnifolia* Felt, Magnolia, Mass. Purplish vein swellings on *Viburnum*, Miss Cora H. Clarke.

S. packardi Felt, Canton, Mass. Swollen twigs of the long-leaved willow, Winthrop Packard.

Asphondyliariæ.

Asphondylia monacha O. S., Barre, Mass. Apparently unmodified Solidago florets, small, apical rosette galls and adherent leaves, Miss Cora H. Clarke.

A. thalictri Felt, Magnolia, Mass. Distorted seed capsules of *Thalictrum*, Miss Cora H. Clarke.

A. ? diervillæ Felt. Distorted fruit of bush honeysuckle. Springfield, Mass., Miss F. A. Stebbins (*inaequalis*).

A. conspicua O. S. Irregular, subglobular apical gall on cone flower. Westville, Conn., Dr. W. E. Britton.

Schizomyia pomum Walsh & Riley. Green or reddish, nut-like, polythalamous bud gall on grape. Springfield, Mass., Miss F. A. Stebbins.

S. coryloides Walsh & Riley. Clustered, fusiform, woolly, pubescent bud gall on grape. Springfield, Mass., Miss F. A. Stebbins.

Cincticornia serrata Felt, Boston, Mass. Circular blister galls on scarlet oak, Miss Cora H. Clarke.

C. caryæ Felt, Worcester, Mass. Probably reared from oak leaf gall by Dr. M. T. Thompson.

C. pustulata Felt, Magnolia, Mass. Pustulate swellings on leaves of black oak, Miss Cora H. Clarke.

C. simpla Felt, Magnolia, Mass. Oval, blister galls on oak leaves, Miss Cora H. Clarke.

C. podagræ Felt, Magnolia, Mass. Narrow, fusiform vein swellings on black oak leaves, Miss Cora H. Clarke.

C. globosa Felt, Magnolia, Mass. Subhemispheric galls on black oak leaves, Miss Cora H. Clarke.

C. pilulæ Walsh, Worcester, Mass. Reddish brown, thick-walled galls on oak leaves, Dr. M. T. Thompson.

C. sobrina Felt, Worcester, Mass. Reared by Dr. M. T. Thompson, probably from oak leaves.

C. connecta Felt, Westville, Conn., Dr. W. E. Britton.

C. pustuloides Beutm. Blister or pustule galls on scarlet and black oak leaves. Springfield, Mass., F. A. Stebbins.

Itonidiniaræ.

- Contarinia spiræina* Felt, Magnolia, Mass. Bud galls on Spiræa, Miss Cora H. Clarke.
- C. pyrivora* Riley, Meriden, Conn., Coe Brothers.
- C. setigera* Lintn., Lowell, Mass. Reared from melon tips.
- C. virginiana* Felt. Swollen, deformed fruit of wild cherry. Stowe, Mass.
- Thecodiplosis dulichii* Felt, Magnolia, Mass. Fruit of Dulichium, Miss Cora H. Clarke.
- T. liri dendri* O. S., Boston, Mass. Ocellate leaf galls on tulip, Mr. J. G. Jack.
- Dicrodiplosis fulva* sp. nov., Jamaica Plain, Mass. Leaf galls on oak identified as those of *Neuroterus umbilicatus*, Miss Cora H. Clarke.
- D. antennata* Felt, Orono, Me. Larvæ preying on false maple scale, *Phenacoccus acericola* King, Dr. O. A. Johansen.
- D. helena* Felt, Magnolia, Mass. Subglobular galls on poplar leaves, Miss Cora H. Clarke.
- Youngomyia umbellicola* O. S. Swollen, unopened florets of elder. Springfield, Mass., Miss F. A. Stebbins.
- Aphidoletes cucumeris* Lintn., Lowell, Mass. Reared from lice-infested melon tips.
- Lobodiplosis accrina* Felt, Brookline, Mass. C. W. Johnson.
- L. quercina* Felt, North Adams, Mass., Owen Bryant.
- L. speciosa* sp. nov. North Adams, Mass., August 1907, Owen Bryant.
- Coquilletomyia bryanti* sp. nov., North Adams, Mass., August 1907, Owen Bryant.
- C. dentata* Felt, Greylock Mountain, Mass., August 1907, Owen Bryant.
- Clinodiplosis caulicola* Coq., Portsmouth, N. H. Stems of Iceland poppies, D. W. Coquillett.
- Caryomyia arcuaria* Felt. Smooth, thin-walled hickory leaf gall. Worcester, Mass., Dr. M. T. Thompson.
- C. caryæ* O. S. Nearly smooth, thin-walled, yellowish green or brown, usually slightly nipped hickory leaf gall. Springfield, Mass., Miss F. A. Stebbins.
- C. inanis* Felt. Thin-walled hickory leaf gall with false chamber at the apex. Worcester, Mass., Dr. M. T. Thompson.

- C. persicoides* Beutm. Thick-walled, globose hickory leaf gall with short, curly hairs. Springfield, Mass., Miss F. A. Stebbins.
- C. holotricha* O. S. Thin-walled, globose hickory leaf gall with rather long, rust-red hairs. Springfield, Mass., Miss F. A. Stebbins.
- C. caryacola* O. S. Conical hickory leaf gall with a long, slender apical process. Springfield, Mass., Miss F. A. Stebbins.
- C. sanguinolenta* O. S. Conical, short, thin-walled hickory leaf gall. Springfield, Mass., Miss F. A. Stebbins.
- C. tubicola* O. S. Cylindric or tubular hickory leaf gall. Worcester, Mass., Dr. M. T. Thompson.
- C. thompsoni* Felt, Worcester, Mass. Hickory leaf gall, Dr. M. T. Thompson.
- Hormomyia shawi* sp. nov., Hampton, N. H., S. A. Shaw.
- H. canadensis* Felt, Magnolia, Mass. Woolly, lipped gall on shadbush leaves, Miss Cora H. Clarke.
- H. johnsoni* Felt, Auburndale, Mass., C. W. Johnson.
- H. clarkei* Felt, Magnolia, Mass. Terminal bud gall on Spiræa, Miss Cora H. Clarke.
- H. verruca* Walsh, Magnolia, Mass. Subconic, clustered galls on willow leaves, Miss Cora H. Clarke.
- H. cincta* Felt, Hampton, N. H., S. A. Shaw.
- H. modesta* sp. nov., Auburndale, Mass., C. W. Johnson, New Haven, Conn., B. H. Walden.
- H. pudica* sp. nov., Hampton, N. H., S. A. Shaw.
- Monarthropalpus burii* Lab., Kingston, R. I. Blister galls on Box leaves, Prof. E. A. Stene.
- Hyperdiplosis bryanti* sp. nov., North Adams, Mass., August 1907, Owen Bryant.
- Parallelodiplosis spiræ* Felt, Magnolia, Mass. Marginal roll on leaves of Spiræa, Miss Cora H. Clarke.
- P. cattleyæ* Moll., South Natick, Mass. Roots of Cattleya, A. P. Morse.
- P. clarkei* Felt, Magnolia, Mass. Narrow apical bud galls, on Spiræa, Miss Cora H. Clarke.
- Itonida canadensis* Felt, Magnolia, Mass. Woolly, oval vein galls on shadbush leaves, Miss Cora H. Clarke.
- I. spiræina* Felt, Magnolia, Mass. Bud galls on Spiræa, Miss Cora H. Clarke.

I. foliora Rssl. & Hkr., Amherst, Mass. Marginal leaf roll on oak leaves.

I. reflexa sp. nov., Hampton, N. H., S. A. Shaw.

I. rigida Pack., Springfield, Mass., Miss F. A. Stebbins.

A number of galls from which adults have not been reared have been recorded from New England. These deformities have been described and named as follows:

Cecidomyia bedeguar Walsh, *celastri* Stebb., *citrina* O. S., *erotalariæ* Stebb., *eupatorifloræ* Beutm., *impatiens* O. S., *lappa* Stebb., *majalis* Bass., *muscosa* Stebb., *niveipila* O. S., *ocellaris* O. S., *pellax* O. S., *poculum* O. S., *potentillæcaulis* Stebb., *pubibunda* O. S., *racemi* Stebb., *reniformis* Stebb., *serotina* O. S., *squamulicola* Stebb., *tuba* Stebb., *venæ* Stebb., and *verrucieola* O. S.

A number of unnamed galls undoubtedly exist in New England territory.

DESCRIPTIONS OF NEW SPECIES LISTED ABOVE.

Monardia modesta sp. nov.

This small midge was taken by Mr. H. L. Viereck at New Haven, Conn., November 4, 1903. It is closely allied to *M. alexanderi* Felt from which it may be separated by colorational characters, the more slender antennal segments and the equal third and fourth palpal segments.

Female. Length, .75 mm. Antennæ hardly extending to the base of the abdomen, thickly haired, fuscous yellowish; 12 segments, the fifth pyriform, with a length one-fourth greater than its diameter and a short, though distinct stem; terminal segment fused with the preceding. Palpi, the third and fourth segments equal. Body a nearly uniform brownish black. Legs mostly fuscous yellowish; claws slender, evenly curved, the pulvilli as long as the claws. Ovipositor lobes triarticulate, the basal segment irregular, trapezoidal, the second quadrate, with a length two and one-half times its width, the third narrowly oval, setose apically. Type: Cecid. 1468.

Asynapta nobilis sp. nov.

The female described below was received from Mr. C. W. Johnson of the Boston Society of Natural History and labeled Bridgeton, Me., August 25. It is easily distinguished from other species of this genus by the long stems of the flagellate antennal segments.

Female. Length, 3.5 mm. Antennæ nearly as long as the body, sparsely haired, dark brown, the stems white; sixteen segments, the fifth with a stem three-fourths the length of the cylindrical basal enlargement, which latter has a length twice its diameter and is ornamented with very irregular, reticulate, stout circumfili; terminal segment produced, with a length about four times its diameter, the distal fifth tapering. Palpi; first segment with a length four times its diameter, the second a little longer, broader, the third longer than the second, more slender, the fourth one-half longer than the third, slightly dilated. Mesonotum yellowish brown. Scutellum and postscutellum yellowish. Abdomen sparsely haired, yellowish red. Halteres and coxæ mostly fuscous yellowish, the legs mostly fuscous straw, except the two distal tarsal segments of the anterior and mid legs and the distal three of the posterior legs which are yellowish white; claws slender, strongly curved, unidentate, the pulvilli rudimentary. Ovipositor nearly as long as the body, the terminal lobes triarticulate, the basal subtriangular, the middle subquadrate, the terminal narrowly oval, sparsely haired. Type: Cecid. 1464.

Asynapta frosti sp. nov.

The female described below was received from Mr. C. W. Johnson of the Boston Society of Natural History and bore the following label "Found in jar of sumac twigs and bees nest, C. A. Frost, Framingham, Mass., VI-1, 10." It is easily distinguished from all other known American females by the number of antennal segments. Since the abdomen was recurved dorsally, this species may possibly be referable to the genus *Ruebsaamenia* Kieff.

Female. Length, 1.5 mm. Antennæ extending to the fourth abdominal segment, sparsely haired, dark brown; twenty-two sessile, cylindrical segments, the fifth with a length three-fourths greater than its diameter; terminal segment slightly produced. Palpi; first segment long, slender, second as long as the first, broader, the third fully one-half longer than the second, the fourth about one-half longer than the third, more slender. Mesonotum shining dark brown. Scutellum fuscous yellowish, postscutellum darker. Abdomen thickly haired, whitish yellow. Wings hyaline, costa light straw. Halteres pale straw basally, fuscous apically. Coxæ pale straw. Legs mostly dark straw, posterior tarsi light straw; claws moderately long, stout, unidentate, the pulvilli as long as the claws. Ovipositor long, slender, recurved dorsally, the terminal lobes slender, biarticulate, the basal segment with a length fully four times its width, the distal segment more slender, narrowly elliptical. Type: Cecid. 1424.

Lobodiplosis speciosa sp. nov.

This remarkable male was taken by Owen Bryant, August, 1907, at North Adams, Mass., and may be easily separated from its allies by the two subapical lobes on the basal clasp segment.

Male. Length, 1 mm. Antennæ twice the length of the body, thickly haired, light brown; fourteen segments, the fifth having the basal portion of the stem with

a length one-half greater than its diameter, the distal part with a length two and one-half times its diameter, the distal enlargement constricted at the basal third and with a length nearly twice its diameter; terminal segment, the basal stem with a length five times its diameter, the distal enlargement irregular, with a length three times its diameter and an irregular, fingerlike process equally long. Palpi; first segment irregularly subquadrate, the second nearly twice the length of the first, the third, one-third longer than the second, the fourth, one-half longer than the third, more slender. Mesonotum dark brown. Scutellum and postscutellum fuscous yellowish. Abdomen thickly haired, yellowish brown. Halteres and legs mostly pale straw, the distal tarsal segments somewhat darker; claws slender, evenly curved, anterior unidentate, the pulvilli rudimentary. Genitalia fuscous yellowish; basal clasp segment broad, with a broad subquadrate, subapical, glabrous lobe and apically a tapering, spined lobe; terminal clasp segment long, slender; dorsal plate short, broadly and triangularly emarginate, the lobes tapering to a narrowly rounded, setose apex; ventral plate narrow, long, broadly rounded and thickly setose apically; style long, tapering. Type: Cecid. 1454.

Coquillettomyia bryanti sp. nov.

The midge described below is easily separated from its allies by the broad, white annulations on the tarsi. It was taken by Owen Bryant, August, 1907, at North Adams, Mass.

Male. Length, 1.25 mm. Antennæ probably twice the length of the body, sparsely haired, fuscous yellowish; fourteen segments, the fifth having the stems with a length three and one-half and four and one-half times their diameters, respectively; distal enlargement with a length twice the diameter and a marked constriction near the basal third. Palpi; the first segment with a length three times its diameter, the second a little longer, stouter, the third slightly longer than the second and the fourth, one-half longer than the third, somewhat dilated. Mesonotum reddish brown, the submedian lines, scutellum and postscutellum fuscous yellowish. Abdomen yellowish brown. Halteres yellowish. Legs mostly dark brown, the first tarsal segment and the base of the second, white, the latter and third and fourth broadly annulate with white apically, the fifth white; claws slender, strongly curved basally, the anterior unidentate, the pulvilli about half the length of the claws. Genitalia; basal clasp segment stout, with a short emarginate lobe basally, the margin heavily chitinized; terminal clasp segment slender; dorsal plate short, broad, broadly and slightly emarginate; ventral plate short, tapering, broadly emarginate. Harpes produced as free, strongly recurved, heavily chitinized processes.

Female. Length, 1.25 mm. Antennæ about as long as the body, sparsely haired, fuscous yellowish; fourteen segments, the fifth with a stem about three-fourths the length of the cylindrical basal enlargement, which latter has a length two and one-half times its diameter; basal portion of the distal segment cylindrical, with a length four times its diameter and apically with a process as long as the enlargement and distinctly swollen at the basal fourth. Mesonotum brownish red. Abdomen brownish yellow. Ovipositor short, the lobes irregularly ovate and thickly setose, other characters practically as in the male. Type: Cecid. 1452, 1453.

Hormomyia shawi sp. nov.

This midge was received from C. W. Johnson of the Boston Society of Natural History and labeled: "VIII-20, 1909 Hampton, N. H., S. A. Shaw 1187." It is allied to *H. consobrina* Felt, from which it is easily separated by coloration and the extremely slender second palpal segment.

Male. Length, 3.5 mm. Antennæ as long as the body, thickly haired, pale yellowish; 15 segments, the fifth having the stems with a length one-half and one-fourth greater than their diameters, respectively. The distal enlargement sub-cylindric, with a length fully half greater than its diameter; terminal segment rudimentary, subglobose. Palpi; first segment stout, with a length about twice its width, the second extremely long and slender, it having a length more than 10 times its diameter. Mesonotum light yellowish orange, submedian lines indistinct. Scutellum and postscutellum yellowish orange. Abdomen thickly haired, pale yellowish, the basal segment and genitalia yellowish orange. Wings hyaline, costa light straw. Halteres yellowish basally, fuscous apically. Coxæ yellowish orange; legs a nearly uniform dark straw; claws slender, evenly curved, the pulvilli rudimentary. Genitalia; basal clasp segment narrowly oval; terminal clasp segment moderately short, stout; dorsal plate broad, roundly and triangularly emarginate, the lobes broadly and irregularly rounded; ventral plate long, broad, subtruncate, slightly emarginate, both sparsely setose. Type: Cecid. 1423.

Hormomyia modesta sp. nov.

This species was taken at Auburndale, Mass., May 22, by Mr. C. W. Johnson of Boston. It may be recognized by the dark brown abdomen and the fourteen cylindric antennal segments, the fifth with a length two and one-half times its diameter and with three circumfili.

Description. Female, Length, 4 mm. Antennæ sparsely haired, fuscous yellowish; fourteen segments, the fifth cylindric, with a length two and one-half times its diameter; sparse whorls of stout setæ occur basally and at the distal third; there are low circumfili near the basal third, the middle and apically; terminal segment slightly produced, with a distinct knob apically. Palpi; first segment short, second with a length three times its diameter, the third a little longer than the second, tapering. Mesonotum smooth, reddish brown, the yellowish submedian lines narrow. Scutellum pale yellowish, postscutellum yellowish, dark brown basally. Abdomen a nearly uniform shining dark brown; ovipositor pale orange; venter concolorous. Wings hyaline. Halteres yellowish basally, fuscous apically. Coxæ, femora and tibiæ mostly a light fuscous yellowish, tarsi fuscous yellowish or dark brown; claws stout, evenly curved, the pulvilli about one-third the length of the claws. Ovipositor short, the lobes broad, tapering to a broadly rounded apex. Type: Cecid. 1346.

Hormomyia pudica sp. nov.

The female described below was received through Mr. C. W. Johnson of the Boston Society of Natural History and labeled June 13, 1907, Hampton, N. H., S. A. Shaw, 1124. It is easily separated from other females having more than eighteen antennal segments, by the three circumfili and the long, uniarticulate palp.

Female. Length, 5 mm. Antennæ extending to the third abdominal segment, sparsely haired, fuscous yellowish, at least eighteen segments, the fifth with a stem about one-fourth the subcylindric basal enlargement, which latter has a length twice its diameter, is rather strongly constricted near the basal third and bears well developed circumfili basally, near the middle and apically. Palpi; the one long segment is distinctly swollen basally, the distal two-thirds being slender and the total length over one-half the width of the head. Mesonotum dark reddish brown. Scutellum and postscutellum fuscous yellowish. Abdomen mostly reddish brown. Halteres and legs mostly fuscous straw; claws long, evenly curved, the pulvilli about half the length of the claws. Ovipositor short, terminal lobes broadly oval, thickly setose, the ventral lobe roundly triangular. Type: Cecid. 1465.

Hyperdiplosis bryanti sp. nov.

This interesting male was taken by Owen Bryant, August, 1907 at North Adams, Mass.

Male. Length, 1 mm. Antennæ probably one-half longer than the body, sparsely haired, light straw; fourteen segments, the fifth having the stems three and three and one-half times their diameters, the circumfili moderately short. Palpi; first segment rather long, irregular, the second broad, with a length thrice its diameter, the third a little longer and more slender than the second, the fourth nearly as long as the third, somewhat dilated. Mesonotum reddish brown. Scutellum and post scutellum yellowish brown. Abdomen dark brown, the genitalia yellowish. Halteres mostly whitish, slightly fuscous apically. The legs mostly straw colored; claws strongly bent at right angles, simple, the pulvilli a little shorter than the claws. Genitalia; basal and terminal clasp segments moderately long, rather slender; dorsal plate short, deeply emarginate, the lobes apparently narrowly rounded; ventral plate greatly produced, deeply and roundly emarginate—in this specimen, irregularly so; style moderately long, stout. Type: Cecid. 1428.

Itonida reflexa sp. nov.

The male described below was received from Mr. C. W. Johnson of the Boston Society of Natural History and labeled: "I. B. 16, 1906, Hampton, N. H., S. A. Shaw, 1143." This species is easily separated from the allied *I. putrida* Felt by the dark brown abdomen and the somewhat longer antennal stems.

Male. Length, 2 mm. Antennæ as long as the body, thickly haired, dark brown; fourteen segments, the fifth having the stems with a length one and one-

fourth and one and three-fourths their diameters, respectively. Distal enlargement subcylindric, with a length one-fourth greater than its diameter; terminal segment, distal enlargement somewhat produced, irregularly fusiform. Palpi; first segment short, with a length one-half greater than its diameter, the second nearly twice the length of the first, the third a little longer than the second and the fourth three-fourths longer than the third, somewhat dilated. Mesonotum slaty gray, the grayish submedian lines sparsely haired. Scutellum and postscutellum dark gray. Abdomen thickly haired, dark brown. Wings hyaline, costa light straw. Halteres yellowish basally, fuscous apically. Coxæ and femora mostly fuscous yellowish; tibiæ and tarsi mostly dark brown; claws moderately stout, strongly curved, the pulvilli shorter than the claws. Genitalia; dorsal plate deeply and triangularly divided, the lobes narrowly triangular; ventral plate broad, broadly and roundly emarginate. Type: Cecid. 1422.

A VERNAL BEE (*COLLETES INÆQUALIS* SAY).

BY JOHN H. LOVELL,
Waldoboro, Maine.

In Mr. Frost's interesting note on *Tricrania sanguinipennis* Say, which was published in *PSYCHE*, December, 1912, the name of the bee near whose burrows the beetles were found is given (through an inadvertence on my part) as *Colletes compactus* Cr., when it should be *C. inæqualis* Say. The two species, while bearing a general superficial resemblance, may be distinguished by the difference in the sculpturing of the enclosure on the metathorax or prepodeum; and by the fact that the former is an autumnal species and the latter a vernal species, some three months intervening between the disappearance of *C. inæqualis* and the appearance of *C. compactus*.

I have this season received both sexes from Mr. Frost, to whom I am indebted for the following notes. The bees were abundant, and had constructed numerous burrows near the base of a sloping embankment, about three feet high, sparsely covered with grass. There were also nests where the ground was level and free from vegetation. As the burrows appeared to be unlined and the soil was sandy it was impossible to follow the tunnels to a depth of more than three or four inches. This species of *Colletes* in New England is on the wing for about two months, and is most commonly taken on the aments of the willows. Mr. Frost captured